

What is claimed is:

1. A wavelength monitor comprising:
a Michelson interferometer optical system
comprising:
an optical element for collimating an incident light beam from a light input section to generate a collimated light beam;
a first beam splitter for splitting the collimated light beam from the optical element into two split beams;
a first reflector and a second reflector each for reflecting the respective split beams from the first beam splitter; and
an interference pattern generating means for inclining the wavefront of the reflected beam from the one of the first reflector and the second reflector, thereby to generate an interference light beam having an interference pattern in the light intensity distribution in an plane of the interference light beam;
a second beam splitter for splitting the interference light beam received from the first beam splitter in a different direction from the incident direction of the interference light beam;

202507-01102

a first photo-detector and a second photo-detector for receiving the respective beams of the interference light split by the second beam splitter;

a first slit provided in front of the first photo-detector;

a second slit provided in front of the second photo-detector; and

a signal processor for counting intensity changes of the light beams from the first photo-detector and the second photo-detector.

2. The wavelength monitor according to claim 1, wherein the interference pattern generating means is realized by inclining the first reflector and/or the second reflector.

3. The wavelength monitor according to claim 1, wherein the interference pattern generating means is realized by inserting a wedge substrate into one of the two optical paths in the optical system.

4. The wavelength monitor according to claim 1, wherein the first slit and/or the second slit is variable in slit width.

5. The wavelength monitor according to claim 1, wherein the first slit and/or the second slit is variable in slit position.

6. The wavelength monitor according to claim 1, wherein light reception is effected by the first photo-detector and/or the second photo-detector which have a detecting area diameter smaller than the diameter of interference beams; and

wherein the first photo-detector and/or the second photo-detector is variable in position.

7. A wavelength monitor comprising:

a Mach-Zehnder interferometer optical system

comprising:

an optical element for collimating an incident light beam from a light input section to generate a collimated light beam;

a first beam splitter for splitting the collimated light beam from the optical element into two split beams;

a first reflector and a second reflector for reflecting the respective split beams from the first beam splitter;

a second beam splitter for recombining the reflected light beams from the first reflector and the second reflector; and

an interference pattern generating means for inclining the wavefront of the reflected beam from the one of the first reflector and the second reflector, thereby to generate an interference light beam having an interference pattern in the light intensity distribution in an plane of the interference light beam;

a third beam splitter for splitting the interference light beam received from the second beam splitter;

a first photo-detector and a second photo-detector for receiving the respective interference light beams split by the third beam splitter;

a first slit provided in front of the first photo-detector;

a second slit provided in front of the second photo-detector; and

a signal processor for counting intensity changes of the light beams from the first photo-detector and the second photo-detector.

8. The wavelength monitor according to claim 7, wherein the interference pattern generating means is realized by inclining the first reflector and/or the second reflector.

9. The wavelength monitor according to claim 7, wherein the interference pattern generating means is realized by inserting a wedge substrate into one of the two optical paths in the optical system.

10. The wavelength monitor according to claim 7, wherein the interference pattern generating means is realized by inclining the first beam splitter and/or the second beam splitter.

11. The wavelength monitor according to claims 7, wherein the first slit and/or the second slit is variable in slit width.

12. The wavelength monitor according to claim 7, wherein the first slit and/or the second slit is variable in slit position.

13. The wavelength monitor according to claim 7, wherein light reception is effected by the first photo-detector and/or the second photo-detector which have a detecting area diameter smaller than the diameter of interference beams; and

wherein the first photo-detector and/or the second photo-detector is variable in position.

14. A wavelength monitor comprising:
a Mach-Zehnder interferometer optical system
comprising:

an optical element for collimating an incident
light beam from a light input section to generate a
collimated light beam;

a first beam splitter for splitting the
collimated light beam from the optical element into
two split beams;

a first reflector and a second reflector for
reflecting the respective split beams from the first
beam splitter;

a second beam splitter for recombining the
reflected light beams from the first reflector and
the second reflector; and

an interference pattern generating means for
inclining the wavefront of the reflected beam from
the one of the first reflector and the second
reflector, thereby to generate an interference light
beam having an interference pattern in the light
intensity distribution in an plane of the
interference light beam;

a first photo-detector for receiving the interference light beam transmitted from the second beam splitter in one of two directions;

a second photo-detector for receiving the interference light beam transmitted from the second beam splitter in the other direction thereof;

a first slit provided in front of the first photo-detector;

a second slit provided in front of the second photo-detector; and

a signal processor for counting intensity changes of the light beams from the first photo-detector and the second photo-detector.

15. The wavelength monitor according to claim 14, wherein the interference pattern generating means is realized by inclining the first reflector and/or the second reflector.

16. The wavelength monitor according to claim 14, wherein the interference pattern generating means is realized by inserting a wedge substrate into one of the two optical paths in the optical system.

17. The wavelength monitor according to claim 14, wherein the interference pattern generating means is realized by inclining the first beam splitter and/or the second beam splitter.

18. The wavelength monitor according to claims 14, wherein the first slit and/or the second slit is variable in slit width.

19. The wavelength monitor according to claim 14, wherein the first slit and/or the second slit is variable in slit position.

20. The wavelength monitor according to claim 14, wherein light reception is effected by the first photo-detector and/or the second photo-detector which have a detecting area diameter smaller than the diameter of interference beams; and

wherein the first photo-detector and/or the second photo-detector is variable in position.

21. A wavelength monitor comprising:

a Mach-Zehnder interferometer optical system
comprising:

an optical element for collimating an incident
light beam from a light input section to generate an
collimated light beam;

a first beam splitter for splitting the
collimated light from the optical element into two
beams;

a first reflector for reflecting one of the two
beams split by the first beam splitter;

a second reflector for reflecting the light beam
reflected by the first reflector;

a second beam splitter for recombining the other
of the two beams split by the first beam splitter
with the light beam reflected by the second
reflector; and

an interference pattern generating means for
inclining the wavefront of the reflected beam from
the one of the first reflector and the second
reflector, thereby to generate an interference light
beam having an interference pattern in the light
intensity distribution in an plane of the
interference light beam;

a third beam splitter for splitting the interference light beam received from the second beam splitter;

a first photo-detector and a second photo-detector for receiving the respective beams of the interference light split by the third beam splitter;

a first slit provided in front of the first photo-detector;

a second slit provided in front of the second photo-detector; and

a signal processor for counting intensity changes of the light beams from the first photo-detector and the second photo-detector.

22. The wavelength monitor according to claim 21, wherein the interference pattern generating means is realized by inclining the first reflector and/or the second reflector.

23. The wavelength monitor according to claim 21, wherein the interference pattern generating means is realized by inserting a wedge substrate into one of the two optical paths in the optical system.

24. The wavelength monitor according to claim 21, wherein the interference pattern generating means is

realized by inclining the first beam splitter and/or the second beam splitter.

25. The wavelength monitor according to claims 21, wherein the first slit and/or the second slit is variable in slit width.

26. The wavelength monitor according to claim 21, wherein the first slit and/or the second slit is variable in slit position.

27. The wavelength monitor according to claim 21, wherein light reception is effected by the first photo-detector and/or the second photo-detector which have a detecting area diameter smaller than the diameter of interference beams; and

wherein the first photo-detector and/or the second photo-detector is variable in position.

28. A wavelength monitor comprising:

a Mach-Zehnder interferometer optical system

comprising:

an optical element for collimating an incident light beam from a light input section to generate a collimated light beam;

a first beam splitter for splitting the collimated light beam from the optical element into two beams;

a first reflector for reflecting one of the two beams split by the first beam splitter;

a second reflector for reflecting the light beam reflected by the first reflector;

a second beam splitter for recombining the other of the two beams split by the first beam splitter with the light beam reflected by the second reflector; and

an interference pattern generating means for inclining the wavefront of the reflected beam from the one of the first reflector and the second reflector, thereby to generate an interference light beam having an interference pattern in the light intensity distribution in an plane of the interference light beam;

a first photo-detector for receiving the interference light beam transmitted from the second beam splitter in one of two directions;

a second photo-detector for receiving the interference light beam transmitted from the second beam splitter in the other direction thereof;

a first slit provided in front of the first photo-detector;

a second slit provided in front of the second photo-detector; and

a signal processor for counting intensity changes of the light beams from the first photo-detector and the second photo-detector.

29. The wavelength monitor according to claim 28, wherein the interference pattern generating means is realized by inclining the first reflector and/or the second reflector.

30. The wavelength monitor according to claim 28, wherein the interference pattern generating means is realized by inserting a wedge substrate into one of the two optical paths in the optical system.

31. The wavelength monitor according to claim 28, wherein the interference pattern generating means is realized by inclining the first beam splitter and/or the second beam splitter.

32. The wavelength monitor according to claims 28, wherein the first slit and/or the second slit is variable in slit width.

33. The wavelength monitor according to claim 28, wherein the first slit and/or the second slit is variable in slit position.

34. The wavelength monitor according to claim 28, wherein light reception is effected by the first photo-detector and/or the second photo-detector which have a detecting area diameter smaller than the diameter of interference beams; and

wherein the first photo-detector and/or the second photo-detector is variable in position.